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Nobel Prize Goes to Scientists Behind MRI Scans

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By Anna Peltola

STOCKHOLM (Reuters) - Two scientists who played a key role in the development of modern hospital scanners won the 2003 Nobel prize for medicine on Monday.

[Reuters Photo](#)

American Paul Lauterbur and Britain's Peter Mansfield were recognized for their discoveries on magnetic resonance imaging (MRI), a painless diagnostic method used by doctors to look inside the bodies of millions of patients every year.

"They have made seminal discoveries concerning the use of magnetic resonance... which represents a breakthrough in medical diagnostics and research," the Nobel Assembly of Sweden's Karolinska Institutet university hospital said in its citation for the prize -- worth \$1.3 million.

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The scientists' work led to the development of modern MRI, which yields three-dimensional images of organs inside the body.

The now-routine technique lets doctors see the extent of a tumor, localize an inflammation in the nervous system, or even see a beating heart.

MRI has helped replace invasive examinations and reduced the risk and discomfort of medical tests ahead of surgery. It is valuable in imaging the brain and spinal cord, and has played an important role in the improved treatment of multiple sclerosis, cancer and Parkinson's disease ([news](#) - [web sites](#)).

Lauterbur, 74, reached at his home in Urbana, in central Illinois before dawn said he was surprised to win the prize. "Everything they say about this sort of interference in your life is true, but it's wonderful," he said.

"It was basically an idea, but once one has an idea, the many possibilities become apparent, and so, it seized hold of me for about a quarter of a century," added Lauterbur, a professor and director of the Biomedical Magnetic Resonance Laboratory at the University of Illinois, College of Medicine at Urbana-Champaign.

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Mansfield, who turns 70 this week and is a professor of physics at the University of Nottingham, thought it was a joke when his wife told him he had won.

"I didn't expect anything like this at all. If someone just told you, you had won the Nobel Prize I think the reaction of 90 percent of the population would be 'yeah, go on pull the other one'," Mansfield told Reuters.

The laureates' innovations are based on the discovery of the magnetic resonance phenomenon, or how atomic nuclei rotate in a magnetic

field, 30 years earlier. Felix Bloch and Edward Mills Purcell won the Nobel physics prize on this finding in 1952.

Until Lauterbur's and Mansfield's studies in the early 1970s -- which lead to practical applications a decade later -- magnetic resonance was used mainly for studying the chemical structure of substances.

Lauterbur found a way to create two-dimensional pictures by introducing radiants in the magnetic field and build pictures of structures that could not be visualized with other methods.

Mansfield showed the signals could be analyzed mathematically, making it possible to develop an imaging method.

More than 60 million MRI examinations are carried out each year and there are some 22,000 MRI cameras globally.

The Nobel prizes, first awarded in 1901, were created in the will of Swedish industrialist Alfred Nobel, inventor of dynamite who died in 1896. They are presented in glittering ceremonies in Stockholm and Oslo on December 10, the anniversary of his death.

A total of 180 people have now won the medicine prize, which has gone to the field of diagnostic methods only once before -- for two developers of computer assisted tomography in 1979.

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